



SystemC CCI WG

Parameter Value Locking

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Parameter Value Locking

- **The objectives of this example are to demonstrate the following:**
 - locking and unlocking parameter values
 - reporting the rejection of an attempt to modify a locked parameter's value

Note: locking and unlocking is shown a context different than for structural parameters, already shown in Example 3.

Legend Diagram

Attribute	Indicator
Returned Status True	
Returned Status False	
Information: Info	
Warning	
Exception Thrown : Error	

Kindly note that the above legend has not been used to demonstrate ***locked()*** API's (used for querying a CCI parameter's locking status) status.

Usage : int_param_handle.locked()

“locked()” API returns **TRUE** when a parameter is in locked state and **FALSE** when in unlocked state

Parameter Value Locking Sequence Diagram

Parameter_Owner

Parameter_Configurator

Within Constructor

Default value : 0

@ 0 ns

Lock without password
int_param.lock();

Set parameter value to 1
int_param = 1;

*/Accellera/CCI/SET_PARAM_FAILED: Parameter locked.
NOTE : Used TRY-CATCH mechanism to catch the error*

int_param.locked()

int_param.locked()

int_param.locked()

Parameter Locking Status: 0
Parameter Value : 0

Parameter Locking Status: 1
Parameter Value : 0

Parameter Locking Status: 1
Parameter Value : 0

Within Constructor

Assign the int_param handle from broker

Parameter Value Locking Sequence Diagram Contd.

Parameter_Owner

Parameter_Configurator

Parameter Locking Status: 1
Parameter Value : 0

`int_param_handle.is_locked()`

Parameter has to be unlocked by the OWNER (the module that locked it)

@ 2 ns

Check if locked and if unlocked, only then assign value to '2'

Result = Locked! Hence, Value can't be assigned

Parameter Locking Status: 1
Parameter Value : 0

`int_param.is_locked()`

@ 5 ns

Unlock parameter without password
`int_param.unlock();`

Parameter Locking Status: 0
Parameter Value : 3

`int_param_handle.is_locked()`

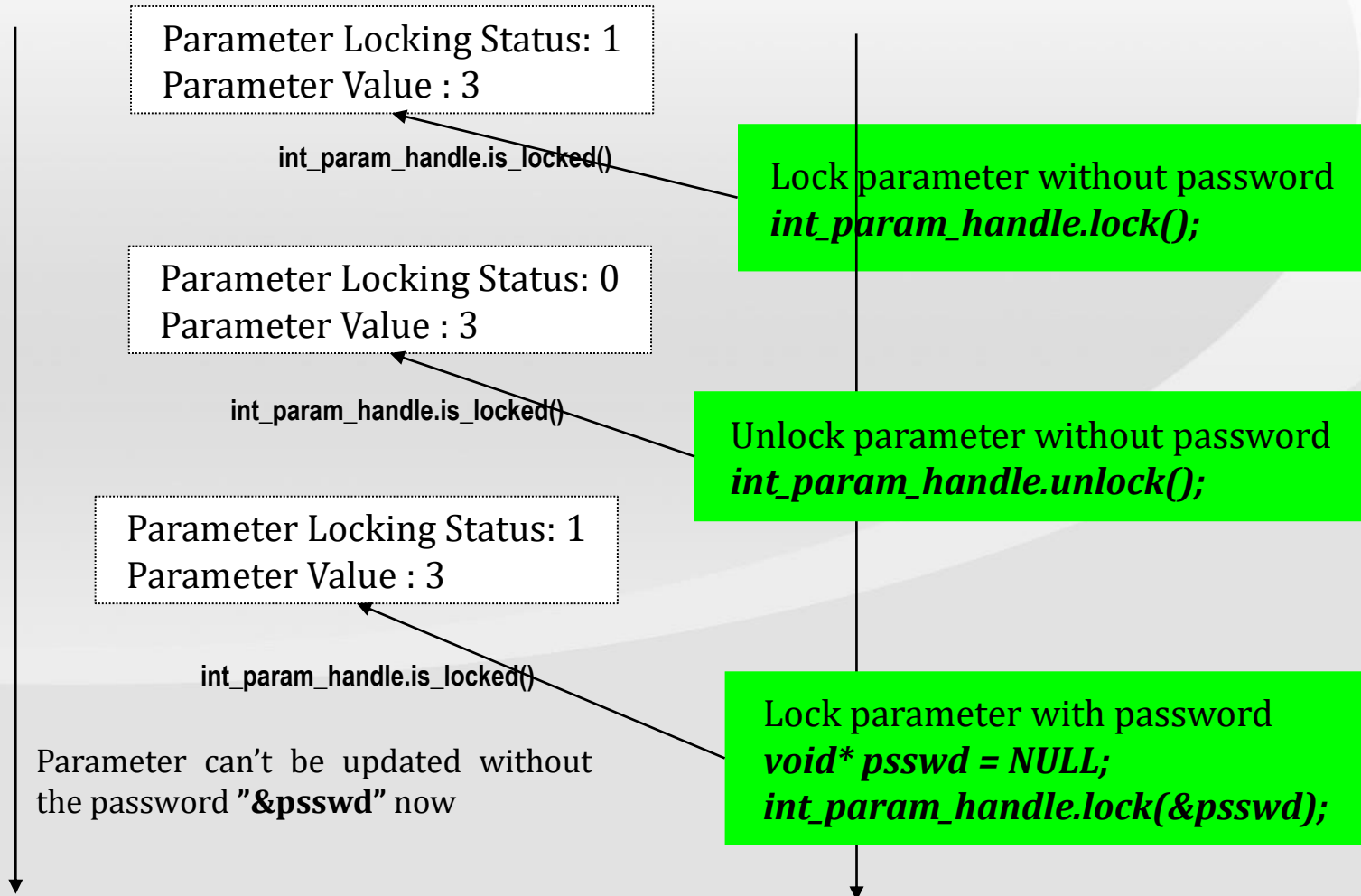
@ 7 ns

Set parameter value to 3
`int_param_handle.
set_cci_value(cci::cci_value(3));`

Parameter Value Locking Sequence Diagram Contd.

Parameter_Owner

Parameter_Configurator



Parameter Value Locking Sequence Diagram Contd.

Parameter_Owner

Parameter_Configurator

Parameter Locking Status: 1
Parameter Value : 3

`int_param_handle.is_locked()`

Parameter can't be updated without
the password "&psswd"

Check if locked and if unlocked, only
then assign value to '4'

**Result = Locked! Hence, Value
can't be assigned**

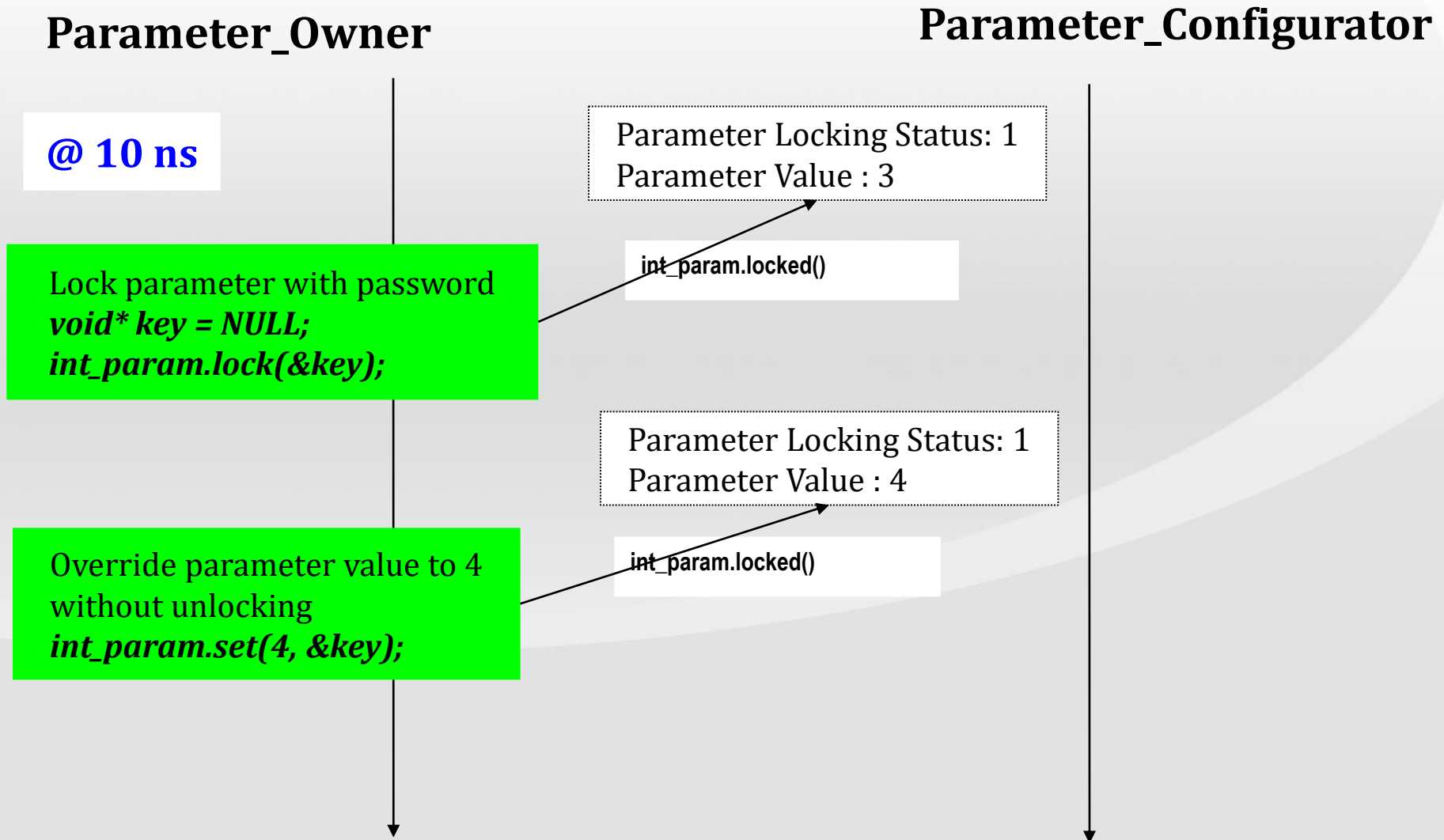
Error: /Accellera/CCI/SET_PARAM_FAILED: Parameter locked.

Parameter Locking Status: 0
Parameter Value : 3

`int_param_handle.is_locked()`

Unlock parameter with correct
password
`int_param_handle.unlock(&psswd);`

Parameter Value Locking Sequence Diagram Contd.



Expected Output (ex13_Parameter_Locking.log)

SystemC Simulation

Info: param_owner: @0 s, [OWNER C_TOR] : Parameter locking status : 0 Value : 0

Info: sc_main: Begin Simulation.

Info: param_owner: @0 s, @ 0 s

Info: param_owner: @0 s, [OWNER] : Locking the parameter without password

Info: param_owner: @0 s, [OWNER] : Parameter locking status : 1 Value : 0

Info: param_owner: @0 s, [OWNER] : Try to set parameter value to 1 from 0

Info: param_owner: @0 s, [OWNER] : param_owner Failed to set parameter value to 1 from 0.

Info: param_owner: @0 s, [OWNER] : Caught Exception : Error: /Accellera/CCI/SET_PARAM_FAILED: Parameter locked.

In file: <removed by verify.pl>

In process: param_owner.run_owner @ 0 s

Info: param_owner: @0 s, [OWNER] : Parameter locking status : 1 Value : 0

Info: param_cfgr: @2 ns, @ 2 ns

Info: param_cfgr: @2 ns, [CFGR] : Parameter locking status : 1 Value : 0

Info: param_cfgr: @2 ns, [CFGR] : Cannot assign new value to the parameter as it is already locked!!

Cont'd

```
Info: param_cfgr: @2 ns, [CFGR] : Parameter locking status : 1    Value : 0
Info: param_owner: @5 ns, @ 5 ns
Info: param_owner: @5 ns, [OWNER] : Unlocking parameter (locked earlier) without password
Info: param_owner: @5 ns, [OWNER] : Parameter locking status : 0 Value : 0
Info: param_cfgr: @7 ns, @ 7 ns
Info: param_cfgr: @7 ns, [CFGR] : Parameter locking status : 0    Value : 0
Info: param_cfgr: @7 ns, [CFGR] : Parameter is not locked!! Assign a new value '3' to it
Info: param_cfgr: @7 ns, [CFGR] : Parameter locking status : 0    Value : 3
Info: param_cfgr: @7 ns, [CFGR] : Lock parameter without password
Info: param_cfgr: @7 ns, [CFGR] : Parameter locking status : 1    Value : 3
Info: param_cfgr: @7 ns, [CFGR] : Unlock parameter without password
Info: param_cfgr: @7 ns, [CFGR] : Parameter locking status : 0    Value : 3
Info: param_cfgr: @7 ns, [CFGR] : Lock with password
Info: param_cfgr: @7 ns, [CFGR] : Parameter locked with password (password not known to OWNER)
Info: param_cfgr: @7 ns, [CFGR] : Parameter locking status : 1    Value : 3
Info: param_cfgr: @7 ns, [CFGR] : Set parameter value to '4'
```

Cont'd

Info: param_cfgr: @7 ns, [CFGR] : Caught Exception : Error: /Accellera/CCI/SET_PARAM_FAILED: Parameter locked.

In file: <removed by verify.pl>

In process: param_cfgr.run_mutable_cfgr @ 7 ns

Info: param_cfgr: @7 ns, [CFGR] : Parameter locking status : 1 Value : 3

Info: param_cfgr: @7 ns, [CFGR] : Now, unlock with the correct password

Info: param_cfgr: @7 ns, [CFGR] : Parameter locking status : 0 Value : 3

Info: param_owner: @10 ns, @ 10 ns

Info: param_owner: @10 ns, [OWNER] : Parameter locking status : 0 Value : 3

Info: param_owner: @10 ns, [OWNER] : Directly lock the unlocked parameter with password

Info: param_owner: @10 ns, [OWNER] : Parameter locking status : 1 Value : 3

Info: param_owner: @10 ns, [OWNER] : Overwrite value of the (locked!) parameter to 4 without unlocking

Info: param_owner: @10 ns, [OWNER] : Parameter locking status : 1 Value : 4

Info: sc_main: End Simulation.